

## CLAIMS

What is claimed is:

1. A communication system for transferring data through a digital switching network, said communication system comprising:

5 a client modem;  
a linecard in communication with said client modem over a local loop; and  
a linecard modem interfacing with said linecard and said digital switching network;

10 wherein said client modem modulates client data to generate modulated client data for transmission to said linecard over said local loop, and wherein said linecard modem receives said modulated client data from said linecard and demodulates said modulated client data to generate said client data for transmission through said digital switching network.

2. The communication system of claim 1, wherein said linecard includes a conversion module capable of generating digitized analog samples of linear/uniform spacing.

15 3. The communication system of claim 1, wherein said linecard modem modulates network data from said digital switching network to generate modulated network data for transmission to said client modem over said local loop, and wherein said client modem receives and demodulates said modulated network data to generate said network data.

20 4. The communication system of claim 1, wherein said linecard modem is a component of said linecard.

5. The communication system of claim 1, wherein said linecard modem supports a maximum data rate of about 64kbps.

6. The communication system of claim 1, wherein said linecard modem supports a maximum data rate of about 128kbps.

7. The communication system of claim 1, wherein said linecard modem and said client modem connect at a speed equal or less than a maximum network speed determined by said linecard modem.

8. A linecard for terminating a local loop used for communication of data between a client modem and a digital switching network, said linecard comprising:

an interface circuitry for terminating said local loop; and

a linecard modem interfacing with said interface circuitry;

a conversion module in communication with said client modem, said

conversion module being capable of generating digitized analog samples of linear/uniform

spacing;

wherein said client modem modulates client data to generate modulated client data for transmission to said linecard modem over said local loop, and wherein said linecard modem demodulates said modulated client data to generated said client data for transmission through said digital switching network.

9. The linecard of claim 8, wherein said linecard modem modulates network data to generate modulated network data for transmission to said client modem over said local loop, and wherein said client modem receives and demodulates said modulate network data to generated said network data.

10. The communication system of claim 8, wherein said linecard modem supports a maximum data rate of about 64 Kbps.

11. The communication system of claim 8, wherein said linecard modem supports a maximum data rate of about 128 Kbps.

12. The communication system of claim 8, wherein said linecard modem supports one or more data rates multiple of 64 Kbps.

13. The communication system of claim 8, wherein said linecard modem and said client modem connect at a speed equal or less than a maximum network speed determined by said linecard modem.

14. The communication system of claim 8, wherein said linecard modem and client modem support V.92, V.90 or V.34 compatible modulation.

15. A communication method for use with a linecard terminating a local loop in communication with a client modem, said linecard interfacing with a linecard modem in communication with a digital switching network, said communication method comprising:

detecting said local loop to be in an off-hook state by said linecard;

transmitting a dial tone by said linecard in response to said detecting;

transmitting a linecard indication indicative of existence of said linecard modem;

receiving a client indication indicative of existence of said client modem;

establishing a connection to said client modem by said line card modem;

receiving modulated client data over said local loop by said linecard modem from said client modem;

demodulating said modulated client data to generate client data by said linecard modem; and

transmitting said client data through said digital switching network.

16. The communication method of claim 15 further comprising:

receiving network data by said linecard modem from said digital switching network;

modulating said network data to generate modulated network data by said linecard modem; and

transmitting said modulated network data to said client modem.

17. The communication method of claim 15, wherein said linecard modem is a component of said linecard.

18. The communication method of claim 15, wherein said linecard modem  
5 supports a maximum data rate of about 64kbps.

19. The communication method of claim 15, wherein said linecard modem supports a maximum data rate of about 128kbps.

20. The communication method of claim 15, wherein said linecard modem supports one or more data rates multiple of 64kbps.

10 21. The communication method of claim 15, wherein said linecard modem and said client modem connect at a speed equal or less than a maximum network speed determined by said linecard modem.

22. The communication method of claim 15, wherein said linecard modem and client modem support V.92, V.90 or V.34 compatible modulation.

15 23. The communication method of claim 15, wherein said linecard indication is generated by said linecard modem.

24. The communication method of claim 23, wherein said linecard indication is a tone above 4kHz.